## Dr. Duke's Phytochemical and Ethnobotanical Database Chemicals Found in Pelargonium graveolens

| Activity<br>Count | Chemical                                  | Plant Part    | Low<br>PPM | High<br>PPM | StdDev | Reference<br>Citation |
|-------------------|---|---------------|------------|-------------|--------|-----------------------|
| 0                 | 1,3-PENTADIENE                            | Essential Oil |            |             |        |                       |
| 0                 | 10-EPI-GAMMA-EUDESMOL                     | Essential Oil |            |             |        |                       |
| 0                 | 11-NORBOURBONANONE                        | Essential Oil |            |             |        |                       |
| 0                 | 11-SELINEN-4-ALPHA-OL                     | Essential Oil |            |             |        |                       |
| 0                 | 2-FURFURAL                                | Essential Oil |            |             |        |                       |
| 0                 | 2-HEXANONE                                | Essential Oil |            |             |        |                       |
| 0                 | 2-METHYL-3-BUTEN-2-OL                     | Essential Oil |            |             |        |                       |
| 0                 | 2-METHYL-3-BUTENAL                        | Plant         |            |             |        |                       |
| 0                 | 2-METHYL-3-PENTANONE                      | Essential Oil |            |             |        |                       |
| 0                 | 2-METHYL-BUTANAL-TRANS-2-METHYL-3-BUTENAL | Essential Oil |            |             |        |                       |
| 0                 | 2-METHYL-BUTANOL                          | Essential Oil |            |             |        |                       |
| 0                 | 2-METHYL-PROPANAL                         | Essential Oil |            |             |        |                       |
| 0                 | 2-METHYLBUTYL-FORMATE                     | Essential Oil |            |             |        |                       |
| 0                 | 2-METHYLOPROPYL-FORMATE                   | Essential Oil |            |             |        |                       |
| 0                 | 2-PENTANONE                               | Essential Oil |            |             |        |                       |
| 0                 | 2-PROPANOL                                | Essential Oil |            |             |        |                       |
| 0                 | 3-HEXEN-1-OL                              | Essential Oil |            |             |        |                       |
| 0                 | 3-METHYL-2-BUTANONE                       | Essential Oil |            |             |        |                       |

| Activity<br>Count | Chemical                          | Plant Part    | Low<br>PPM | High<br>PPM | StdDev              | Reference<br>Citation |
|-------------------|-----------------------------------|---------------|------------|-------------|---------------------|-----------------------|
| 0                 | 3-METHYL-BUTANOL                  | Essential Oil |            |             |                     |                       |
| 0                 | 3-METHYL-CYCLO-PENTANONE          | Essential Oil |            |             |                     |                       |
| 0                 | 3-METHYLBUTYL-FORMATE             | Essential Oil |            |             |                     |                       |
| 0                 | 4-METHYL-2-PENTANONE              | Essential Oil |            |             |                     |                       |
| 0                 | 6-OXO-6,7-DIHYDROCITRONELLIC-ACID | Essential Oil |            |             |                     |                       |
| 0                 | 7-HYDROXY-6,7-DIHYDROGERANIOL     | Essential Oil |            |             |                     |                       |
| 0                 | 7-HYDROXYDIHYDROCITRONELLOL       | Essential Oil |            |             |                     |                       |
| 6                 | ACETALDEHYDE                      | Essential Oil |            |             |                     |                       |
| 16                | ACETIC-ACID                       | Essential Oil |            |             |                     |                       |
| 3                 | ACETONE                           | Essential Oil |            |             |                     |                       |
| 0                 | ALCOHOLS                          | Essential Oil |            |             |                     |                       |
| 0                 | ALPHA-BOURBONENE                  | Essential Oil |            |             |                     |                       |
| 0                 | ALPHA-CALACORENE                  | Essential Oil |            |             |                     |                       |
| 0                 | ALPHA-MUUROLENE                   | Essential Oil |            |             |                     |                       |
| 11                | ALPHA-PHELLANDRENE                | Essential Oil |            |             |                     |                       |
| 28                | ALPHA-PINENE                      | Essential Oil | 1          | 3           | -0.5600433656432124 |                       |
| 0                 | ALPHA-SANTALENE                   | Plant         |            |             |                     |                       |
| 23                | ALPHA-TERPINEOL                   | Essential Oil | 4          | 22          | -0.7720662078462751 |                       |
| 3                 | AR-CURCUMENE                      | Essential Oil |            |             |                     |                       |

| Activity<br>Count | Chemical               | Plant Part    | Low<br>PPM | High<br>PPM | StdDev            | Reference<br>Citation |
|-------------------|------------------------|---------------|------------|-------------|-------------------|-----------------------|
| 6                 | BETA-BISABOLENE        | Essential Oil |            |             |                   |                       |
| 0                 | BETA-BOURBONENE        | Essential Oil |            |             |                   |                       |
| 5                 | BETA-ELEMENE           | Essential Oil |            |             |                   |                       |
| 3                 | BETA-PHELLANDRENE      | Essential Oil |            |             |                   |                       |
| 13                | BETA-PINENE            | Essential Oil |            |             |                   |                       |
| 0                 | BOIS-DE-ROSE-OXIDE     | Essential Oil | 1          | 2           |                   |                       |
| 35                | BORNEOL                | Essential Oil |            |             |                   |                       |
| 0                 | BUTANAL                | Essential Oil |            |             |                   |                       |
| 0                 | BUTANE                 | Essential Oil |            |             |                   |                       |
| 0                 | BUTANOL                | Essential Oil |            |             |                   |                       |
| 0                 | CALAMENENE             | Essential Oil |            |             |                   |                       |
| 5                 | CAPRYLIC-ACID          | Essential Oil |            |             |                   |                       |
| 31                | CARYOPHYLLENE          | Essential Oil |            |             |                   |                       |
| 1                 | CIS-3-HEXENOL          | Essential Oil | 1          | 1           |                   |                       |
| 0                 | CIS-DEHYDROCITRONELLOL | Essential Oil |            |             |                   |                       |
| 0                 | CIS-ROSE-OXIDE         | Essential Oil | 1          | 2           |                   |                       |
| 53                | CITRAL                 | Essential Oil |            |             |                   |                       |
| 20                | CITRONELLAL            | Essential Oil |            |             |                   |                       |
| 15                | CITRONELLOL            | Plant         | 21         | 1176        | 2.123051972799649 |                       |

| Activity<br>Count | Chemical                | Plant Part    | Low<br>PPM | High<br>PPM | StdDev              | Reference<br>Citation |
|-------------------|-------------------------|---------------|------------|-------------|---------------------|-----------------------|
| 2                 | CITRONELLYL-ACETATE     | Essential Oil |            |             |                     |                       |
| 1                 | CITRONELLYL-FORMATE     | Essential Oil | 1          | 2           |                     |                       |
| 0                 | CITRONELLYLDIETHYLAMINE | Essential Oil |            |             |                     |                       |
| 1                 | COPAENE                 | Essential Oil |            |             |                     |                       |
| 0                 | DECYL-ALDEHYDE          | Essential Oil |            |             |                     |                       |
| 9                 | DELTA-CADINENE          | Essential Oil |            |             |                     |                       |
| 2                 | DIMETHYL-SULFIDE        | Plant         |            |             |                     |                       |
| 0                 | EO                      | Plant         | 800        | 4000        | -0.4361356820223302 |                       |
| 0                 | EPOXYLINALOL            | Essential Oil | 1          | 4           |                     |                       |
| 0                 | ESTERS                  | Essential Oil |            |             |                     |                       |
| 24                | ETHANOL                 | Essential Oil |            |             |                     |                       |
| 76                | EUGENOL                 | Essential Oil |            |             |                     |                       |
| 13                | FORMIC-ACID             | Essential Oil |            |             |                     |                       |
| 0                 | FURAN                   | Essential Oil |            |             |                     |                       |
| 0                 | FURAPELAGONE-A          | Essential Oil |            |             |                     |                       |
| 0                 | FURAPELAGONE-B          | Essential Oil |            |             |                     |                       |
| 0                 | GAMMA-CADINENE          | Essential Oil |            |             |                     |                       |
| 0                 | GAMMA-MUUROLENE         | Essential Oil |            |             |                     |                       |
| 13                | GERANIAL                | Essential Oil | 2          | 12          | -1                  |                       |

| Activity<br>Count | Chemical          | Plant Part    | Low<br>PPM | High<br>PPM | StdDev              | Reference<br>Citation |
|-------------------|-------------------|---------------|------------|-------------|---------------------|-----------------------|
| 35                | GERANIOL          | Plant         | 2          | 1400        | -0.2090839590379573 |                       |
| 5                 | GERANYL-ACETATE   | Essential Oil |            |             |                     |                       |
| 0                 | GERANYL-TIGLATE   | Essential Oil |            |             |                     |                       |
| 0                 | GERMACRATRIENE    | Essential Oil |            |             |                     |                       |
| 0                 | GUAIA-6,9-DIENE   | Plant         |            |             |                     |                       |
| 1                 | HEXYL-FORMATE     | Essential Oil |            |             |                     |                       |
| 2                 | HUMULENE          | Essential Oil |            |             |                     |                       |
| 3                 | ISOAMYL-ALCOHOL   | Essential Oil |            |             |                     |                       |
| 3                 | ISOMENTHONE       | Essential Oil | 8          | 38          | -1                  |                       |
| 0                 | ISOOCTANE         | Essential Oil |            |             |                     |                       |
| 0                 | ISOPRENE          | Essential Oil |            |             |                     |                       |
| 0                 | ISOPROPYL-FORMATE | Essential Oil |            |             |                     |                       |
| 3                 | ISOPULEGOL        | Essential Oil |            |             |                     |                       |
| 0                 | JUNENOL           | Essential Oil |            |             |                     |                       |
| 0                 | L-CITRONELLOL     | Essential Oil |            |             |                     |                       |
| 60                | LIMONENE          | Essential Oil | 1          | 3           | -0.7370481396201248 |                       |
| 0                 | LINALOL           | Plant         | 30         | 505         | -0.3180486984089818 |                       |
| 63                | MENTHOL           | Plant         | 2          | 1852        | 0.738920288124005   |                       |
| 30                | MENTHONE          | Essential Oil | 8          | 38          | -1                  |                       |

| Activity<br>Count | Chemical                 | Plant Part    | Low<br>PPM | High<br>PPM | StdDev               | Reference<br>Citation |
|-------------------|--------------------------|---------------|------------|-------------|----------------------|-----------------------|
| 2                 | METHANOL                 | Essential Oil |            |             |                      |                       |
| 2                 | METHYL-BUTYRATE          | Essential Oil |            |             |                      |                       |
| 0                 | METHYL-FORMATE           | Essential Oil |            |             |                      |                       |
| 0                 | METHYL-HEPTENONE         | Essential Oil | 2          | 9           |                      |                       |
| 0                 | METHYL-HEXYL-CARBINEOL   | Essential Oil |            |             |                      |                       |
| 0                 | METHYL-PENTANOL          | Essential Oil |            |             |                      |                       |
| 22                | MYRCENE                  | Essential Oil | 1          | 2           | -0.44404370426836665 |                       |
| 0                 | NEOISOMENTHOL            | Essential Oil |            |             |                      |                       |
| 4                 | NERAL                    | Essential Oil | 2          | 12          | -1                   |                       |
| 16                | P-CYMENE                 | Essential Oil | 1          | 2           | -0.633376049809191   |                       |
| 0                 | PELARGONIC-ACID          | Plant         |            |             |                      |                       |
| 0                 | PHENYL-ETHYL-ALCOHOL     | Plant         | 2          | 8           | -0.8904524648073894  |                       |
| 6                 | PROPIONIC-ACID           | Essential Oil |            |             |                      |                       |
| 0                 | PROPYL-FORMATE           | Essential Oil |            |             |                      |                       |
| 5                 | SABINENE                 | Essential Oil |            |             |                      |                       |
| 0                 | SELINA-3,7(11)-DIENE     | Plant         |            |             |                      |                       |
| 0                 | SELINA-4(14),7(11)-DIENE | Essential Oil |            |             |                      |                       |
| 1                 | TIGLIC-ACID              | Essential Oil |            |             |                      |                       |
| 1                 | TOLUENE                  | Essential Oil |            |             |                      |                       |

|   | tivity<br>unt | Chemical                 | Plant Part    | High<br>PPM | StdDev | Reference<br>Citation |
|---|---------------|--------------------------|---------------|-------------|--------|-----------------------|
| 0 |               | TRANS-DEHYDROCITRONELLOL | Essential Oil | <br>        |        |                       |